



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-0657; Project Identifier AD-2022-01351-T; Amendment 39-22652; AD 2024-01-01]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain The Boeing Company (Boeing) Model 787-8, 787-9, and 787-10 airplanes. This AD was prompted by reports of undetected water leaks from the faucet control module (FCM) migrating below the passenger floor in multiple lavatory locations during flight, and into the electronic equipment bay(s). This AD requires repetitive general visual inspections of the area under all lavatory washbasins for evidence of intermittent and active leaks at the FCM and applicable on-condition actions. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0657; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday

through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

Material Incorporated by Reference:

- For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; website myboeingfleet.com.

- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at regulations.gov under Docket No. FAA-2023-0657.

FOR FURTHER INFORMATION CONTACT: Courtney Tuck, Aviation Safety Engineer, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone 206-231-3986; email Courtney.K.Tuck@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all Boeing Model 787-8, 787-9, and 787-10 airplanes. The NPRM published in the *Federal Register* on April 10, 2023 (88 FR 21120). The NPRM was prompted by reports of undetected water leaks from the FCM migrating below the passenger floor in multiple lavatory locations during flight, and into the electronic equipment bay(s). In the NPRM, the FAA advised that the FCMs are located under the sinks in each lavatory and have an O-ring seal at the top of the FCM

mixing chamber; a small amount of water leaking past the O-ring has been identified as the source of the leak.

In the NPRM, the FAA proposed to require repetitive general visual inspections of the area under all lavatory washbasins for evidence of intermittent and active leaks at the FCM and applicable on-condition actions, including replacing the affected FCM. The FAA is issuing this AD to address undetected water leaks, which could damage flight critical equipment. The unsafe condition, if not addressed, could result in loss of multiple line replaceable units (LRUs) and subsequent loss of continued safe flight and landing.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from Boeing and the Air Line Pilots Association, International, who supported the NPRM without change.

The FAA received additional comments from United Airlines (UAL), American Airlines (American), and All Nippon Airways (ANA). The following presents the comments received on the NPRM and the FAA's response to each comment.

Request to Allow Alternative Cleaning Material

UAL noted that the proposed AD would require complying with the actions in table 1 of Boeing Alert Requirements Bulletin B787-81205-SB250290-00 RB, Issue 001, dated November 1, 2022, which then references the procedures in Service Bulletin B787-81205-SB250290-00 Issue 001 or later approved issues for each action. UAL stated that the service bulletin contains a cleaning action that refers to a Jamco component maintenance manual (CMM) as an accepted procedure. UAL further stated that the instructions in the Jamco CMM for removing scale specify using a corrosive solution that can produce harmful fumes. As a result, UAL asked to use a milder product as an alternative.

Both the requirements bulletin and the service bulletin state that where the instructions refer to another document, operators may use accepted alternative procedures. Where the instructions state a procedure must be done in accordance with a Boeing document, then operators will need an alternative method of compliance (AMOC) to use a different procedure. Because the cleaning procedure mentioned by the commenter refers to the Jamco CMM, operators may use accepted alternative procedures, including a different accepted cleaning product, without obtaining an AMOC. No change to the AD is necessary as a result of this comment.

Request to Limit Inspection Area

In the NPRM, the FAA proposed to require visual inspections at all lavatory locations. American and ANA requested that the FAA limit the inspection to the area under the lavatory washbasins located in the door 1 and door 3 area near the electronic equipment bays. American added that leaks in other locations do not have the potential to cause damage to the LRUs and thus do not affect safe operation of the airplane.

The FAA disagrees with the commenters' request. The unsafe condition exists when two FCMs leak simultaneously, involving the loss of flight-critical equipment at different locations. This could occur at door 1, 2, 3, or 4. Further, it is possible to have multiple persistent and simultaneous latent leaks from different lavatories on the same airplane. Therefore, it is necessary to inspect the lavatories at all locations, not just those near the electronic equipment bays.

Request to Reference Master Minimum Equipment List (MMEL) Item 38-10-01A

American requested that the FAA state that MMEL item 38-10-01A (which allows individual components of the potable water system to be inoperative provided associated components are deactivated or isolated and associated system components are verified to not have leaks) remains valid and applicable as a method to deactivate the water supply to a discrepant FCM.

The FAA agrees that this AD does not conflict with an operator's ability to dispatch an airplane with an inoperable potable water system under MMEL item 38-10-01A. The FAA has not changed this AD in this regard.

Request to Limit Actions for Intermittent Leaks

ANA requested that the FAA revise the proposed AD to not require corrective action if intermittent leaks are found from the FCM. ANA stated that if evidence of intermittent leaks are found at the FCM, the source of the leak isn't necessarily the FCM, and therefore it should not be necessary to replace the FCM or deactivate the water supply to the FCM.

The FAA disagrees. Intermittent leaks may have a long latency period and be difficult to detect, but they can still cause the unsafe condition identified in this AD and therefore must be addressed. Operators with a method other than replacement of the FCM, which provides an acceptable level of safety, may request approval to use an AMOC. The FAA did not change this AD as a result of this request.

Additional Changes to this Final Rule

After the NPRM was published, Boeing notified the FAA that certain airplanes were modified in production and delivered with a redesigned FCM that is not subject to the unsafe condition. The FAA has determined the actions required by this AD are not necessary on those airplanes and has therefore revised the applicability of this AD to only include airplanes that were delivered with the affected FCM.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for the changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information under 1 CFR Part 51

The FAA reviewed Boeing Alert Requirements Bulletin B787-81205-SB250290-00 RB, Issue 001, dated November 1, 2022. This service information specifies procedures for a repetitive general visual inspection of the area under all lavatory washbasins for evidence of intermittent and active leaks at the FCM and applicable on-condition actions. On-condition actions include replacing the affected FCM with new or serviceable FCM at affected lavatory washbasin(s), and doing a leak test. If a leak is found, the service information specifies doing applicable corrective action, repeating the leak test, and making sure no leak is found.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Differences Between this AD and the Service Information

The effectivity of Boeing Alert Requirements Bulletin B787-81205-SB250290-00 RB, Issue 001, dated November 1, 2022, is Model 787-8, -9, and -10 airplanes, line numbers 6 through 9996. As the FAA stated in the NPRM, the agency would consider revising the applicability of the final rule to exclude airplanes with a redesigned FCM that eliminates the need for the actions required by this AD. Therefore, the applicability of this AD does not include those line-numbered airplanes with a redesigned FCM installed in production.

Interim Action

This AD is an interim action. The FAA is considering additional rulemaking regarding the redesigned FCM that addresses the unsafe condition identified in this AD.

Costs of Compliance

The FAA estimates that this AD affects 140 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	1 work-hour X \$85 per hour = \$85 per inspection cycle	\$0	\$85 per inspection cycle	\$11,900

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the inspection. The agency has no way of determining the number of aircraft that might need these replacements:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Replacement	1 work-hour X \$85 per hour = \$85	\$6,021	\$6,106

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the

national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2024-01-01 The Boeing Company: Amendment 39-22652; Docket No. FAA-2023-0657; Project Identifier AD-2022-01351-T.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 787-8, 787-9, and 787-10 airplanes, certificated in any category, having line numbers 6 through 687 inclusive, 689

through 954 inclusive, 956 through 970 inclusive, 972 through 982 inclusive, 984 through 989 inclusive, 991 through 996 inclusive, 999, 1001 through 1008 inclusive, 1012, 1013, 1016 through 1019 inclusive, 1021, 1022, 1024 through 1026 inclusive, 1029 through 1032 inclusive, 1038, 1040, 1041, 1044, 1045, 1047, 1048, 1054 through 1062 inclusive, 1071, 1072, 1074, 1075, 1082, 1085, 1087, 1091, 1094, 1095, 1098, 1099, 1103, 1109, 1112 through 1114 inclusive, 1117, 1118, 1121, 1122, 1125, 1126, 1128 through 1134 inclusive, 1136 through 1145 inclusive, 1147, 1148, 1151, 1161, and 1167.

(d) Subject

Air Transport Association (ATA) of America Code 38, Water/waste.

(e) Unsafe Condition

This AD was prompted by reports of undetected water leaks from the faucet control module migrating below the passenger floor in multiple lavatory locations during flight, and into the electronic equipment bay(s). The FAA is issuing this AD to address undetected water leaks, which could damage flight critical equipment. The unsafe condition, if not addressed, could result in loss of multiple line replaceable units and subsequent loss of continued safe flight and landing.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Except as specified by paragraph (h) of this AD: At the applicable times specified in the “Compliance” paragraph of Boeing Alert Requirements Bulletin B787-81205-SB250290-00 RB, Issue 001, dated November 1, 2022, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin B787-81205-SB250290-00 RB, Issue 001, dated November 1, 2022.

Note 1 to paragraph (g): Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin B787-81205-SB250290-00, Issue 001, dated November 1, 2022, which is referred to in Boeing Alert Requirements Bulletin B787-81205-SB250290-00, Issue 001, dated November 1, 2022.

(h) Exceptions to Service Information Specifications

Where the Compliance Time column of the table in the “Compliance” paragraph of Boeing Alert Requirements Bulletin B787-81205-SB250290-00 RB, Issue 001, dated November 1, 2022, uses the phrase “the Issue 001 date of the Requirements Bulletin B787-81205-SB250290-00 RB,” this AD requires using “the effective date of this AD.”

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, AIR-520 Continued Operational Safety Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, AIR-520 Continued Operational Safety Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must

meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(j) Related Information

For more information about this AD, contact Courtney Tuck, Aviation Safety Engineer, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone 206-231-3986; email Courtney.K.Tuck@faa.gov.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Alert Requirements Bulletin B787-81205-SB250290-00 RB, Issue 001, dated November 1, 2022.

(ii) [Reserved]

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; website myboeingfleet.com.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit www.archives.gov/federal-register/cfr/ibr-locations or email fr.inspection@nara.gov.

Issued on January 3, 2024.

Victor Wicklund,
Deputy Director, Compliance & Airworthiness Division,
Aircraft Certification Service.
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